GRAND PORTAGE BAND OF CHIPPEWA

ENVIRONMENTAL DEPARTMENT

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Dear Mr. Johnson, Mr. Bruner, and Mr. Jimenez:

This letter is in response to the co-lead agencies' Supplemental Draft Environmental Impact Statement ("SDEIS") for the PolyMet Project and certain, recent contacts with the co-lead agencies. As co-lead agencies, the U.S. Army Corps of Engineers and the U.S. Forest Service have the regulatory responsibility to ensure the accuracy and the professional and scientific integrity of the content within their joint SDEIS. The agencies have fallen short of that requirement for the reasons discussed below.

I. NEPA clearly lays out a Lead Agency's responsibilities in preparing an EIS.

An EIS prepared pursuant to the requirements of NEPA must be prepared directly by either the lead agency, a contractor selected by the lead agency, or, where appropriate under Section 1501.6(b), a cooperating agency.[1] A lead agency has wide discretion to contract tasks or analyses under NEPA to third parties. Often, a third-party contractor is hired to develop and write EISs for lead agencies. Although the third-party contractor is paid by the project applicant, the third-party contractor must abide by the scope of the work delegated to it. That work is generally set forth in a "Statement of Work" written by lead agencies.[2]

Regulations also require lead agencies to ensure the accuracy of EIS content gathered by a contracting party. Lead agencies must "insure the professional integrity, including scientific integrity, of the discussions and analyses in an EIS.[3] They must also "identify any methodologies used" and "make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement."[4] Further, if a lead agency chooses to use information submitted by the project proponent in an EIS, the agency must "independently evaluate" the information and "shall be responsible for its accuracy,"[5] consistent with its obligation to "insure the professional integrity" of its work product.[6] In that circumstance, the lead agency must also include in the list of preparers the names of the persons responsible for the independent evaluation.[7]

II. Co-leads maintain equal, joint responsibility to ensure the accuracy of the EIS—contrary to the Corps's recent claims.

Co-leads,[8] also known as joint lead agencies, share the lead agency's responsibility for management of the NEPA process and must to the fullest extent possible engage in joint coordination on planning processes and environmental research and studies.[9] But the US Army Corps of Engineers (Corps), a co-lead in this matter, has recently claimed in meetings that it is not responsible or liable for the third-party contractor's evaluation of water modeling because the Corps did not participate in the meetings pertaining to that topic, while the Forest Service did.

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[1] 40 C.F.R. § 1506.5
[2] NEPA Sample Statement of Work, NEPA Library, U.S. General Services Administration, http://www.gsa.gov/graphics/pbs/Sample_SOW.pdf.
[3] 40 C.F.R. § 1502.24.
[4] *Id.*
[5] *Id.* § 1506.5(a).
[6] *Id.* § 1502.24.
[7] *Id.* § 1506.5(a).
[8] *Id.* § 1506.2(c).
[9] *Id.* § 1506.2(b); *Life of the Land v. Brinegar*, 485 F.2d 460, 467 (9th Cir. 1973) (explaining that lead agencies "must bear the responsibility for the ultimate work product designed to satisfy the requirement of section 102(2)(C)" of NEPA).

Such a position does not comport with NEPA. Co-leads,[10] also known as joint lead agencies, are just that; they share the lead-agency responsibility for management of the NEPA process and must to the fullest extent possible engage in joint coordination on planning processes and environmental research and studies.[11] Such cooperation includes the creation of a joint EIS.[12] Just as the Corps and the U.S. Forest Service (Forest Service) share the responsibility to prepare an EIS, they are both responsible for verifying the accuracy of information gathered by third parties that becomes a part of the EIS.[13] As a corollary, NEPA regulations do not limit a co-lead's regulatory responsibility based on which meetings that agency chose to attend. Such a rule would undercut the very purpose of an EIS, which is to demonstrate that the agency or agencies have performed the necessary environmental analyses to ensure compliance with NEPA.[14] Therefore, the Corps' position on this point is patently incorrect.

III. The Co-Leads here have failed to fulfill their responsibilities as relates to water modeling on this project.

In spite of the Corps' and Forest Service's joint responsibility to "independently evaluate" information submitted by the project proponent[15] and "insure the professional integrity" of that work product,[16] the Co-Leads have failed to identify numerous issues that render the MODFLOW water modeling for the PolyMet Project uncalibrated and unable to contribute relevant information regarding potential project impacts.[17] This is hardly the first time we have raised this issue and documented this problem—in fact, we have done so at all phases of EIS preparation—but we do so again here.

First, the MODFLOW was improperly calibrated using baseflow and water levels from different time periods. To calibrate the MODFLOW groundwater model at the mine site, flow measurements in the Partridge River were estimated using a stream gauge 20 miles downstream of the mine site and extrapolated upstream. The years of data used to extrapolate upstream flow were 1986 and 1987[18] because there were no surface water discharges from the Peter Mitchell Pits during that period. In 1986-87, the pits water levels were low and refilling due to a mix of precipitation, runoff, and groundwater inflow.

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[10] *Id.* § 1506.2(c).
[11] *Id.* § 1506.2(b); *Life of the Land*, 485 F.2d at 467.
[12] *Id.* § 1506.2(c).
[13] *Id.* § 1506.5(a).
[14] *Id.* § 1502.1.
[15] 40 C.F.R. § 1506.5(a).
[16] *Id.* § 1502.24.
[17] It's worth noting that the MODFLOW model was explicitly used in numerous components of the mine site GoldSim contaminant transport analysis to predict the direction and rate of transport of contaminants that would daylight in surface waters nearby. *See* Water Modeling Data Package vol. 1, Mine Site version13, December 29, 2014, Barr Engineering.
[18] *Id.*

However, Peter Mitchell Pit water levels from 1986-1987 were not used for model construction. Instead, water levels were used from *1996*[19]—a year when the Peter Mitchell Pits were full and discharging water to groundwater in the Partridge River basin. If Peter Mitchell Pit water levels had been incorporated from the same period of time that stream flow measurements were taken, *i.e.* 1986-87, groundwater flow direction predicted by the MODFLOW model would have been reversed and groundwater recharge predictions may have more closely mirrored the best available science for the project area. That is, 0.9 inches per year of recharge used in the PolyMet MODFLOW model versus the U.S. Geological Survey's 9.0 inches of recharge per year for the same area. Because baseflow and water levels were used from different time periods, accurate flow directions and gradients for groundwater, either in 1986-87 or for present and future conditions, are impossible to determine.

Second, the MODFLOW model creates the illusion of an endless supply of water, thus demonstrating that the model was not properly calibrated and that both the DEIS and SDEIS were based on a variety of conclusions that lack any credible quantitative data. The Partridge River was digitized so that in some of the MODFLOW model cells, *the stage (surface) of the river (actually flowing downstream) is shown flowing uphill*. Water flowing uphill is physically impossible and this defect contributes to the illusion of an endless supply of water.

Additionally, in MODFLOW, the rule of thumb is to model the top layer of groundwater as an *unconfined* unit.[20] But in the top layer of the PolyMet groundwater model, the water table was modeled using parameters for a *confined* aquifer with the potential to convert to an unconfined layer.[21] By definition, the water table is unconfined.[22] Modeling the top groundwater layer as confined produces the illusion of no drawdown and, again, an endless supply of water.

Third, during the PolyMet review of possible project impacts in 2009, prior to the publication of the DEIS, tribal cooperating agencies noted a discrepancy between the drawdown reported in RS22 Appendix B (draft- 03) and the actual results of the MODFLOW model used at the PolyMet mine site. The modeling report[23] discussed impacts to groundwater levels and showed the model-predicted drawdown of the surficial aquifer in several figures. The MODFLOW input and output files were the basis of Appendix B. However, the model files showed drawdown of at least one foot over a substantially larger area than was reported in Appendix B. Although the modeling report stated that the drawdown contour figures were the result of the MODFLOW model, it appeared that the one-foot drawdown contour in Figure 4-8 had been modified from the contour generated by MODFLOW in Groundwater Vistas. It appeared that more than half of the

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[19] Information derived from Minnesota Department of Natural Resources official Mike Lilegren, responding to a question during a GLIFWC PolyMet Web-ex and conference call presentation on April 4, 2015.
[20] Applied Groundwater Modeling: Simulation of Flow and Advective Transport, Anderson and Woessner, 2002.
[21] Water Modeling Data Package, vol. 1, Mine Site version13, December 29, 2014, Barr Engineering.
[22] Evaluation of Groundwater Flow Models training, Daniel Feinstein, April, 2015.
[23] *See* RS22 App'x B, Draft-03.

predicted one-foot contour area was deleted from Figure 4-8 and a line was inserted to close the contour where the area was eliminated.[24] This modification of the area identified as having one foot or more of drawdown was substantial. According to the RS22 Appendix B report Figure 4-8, the area that was predicted to be impacted by one foot or more of drawdown was approximately 3,757 acres. The MODFLOW files, on the other hand, showed a prediction of approximately 8,922 acres impacted by one foot or more of drawdown. Nowhere have the Co-Leads taken action to address this discrepancy.

Fourth, a final hydrology report provided to Northshore Mining Company states:" [t]he Partridge River upstream of Colby Lake will experience a drainage area reduction of approximately 7 square miles between current conditions and post-closure conditions. This reduction is located at the headwaters of the river. Reductions in post-closure flows at the Dunka Road crossing are estimated to be as high as forty percent. Flow reductions in the 4.5 mile reach upsteam of Dunka Road will be greater, as the area removed from the watershed represents a greater percentage of the total tributary area. Flows in the Partridge River immediately downstream of the post-closure watershed boundary may be reduced by close to 100 percent relative to current conditions."[25]

Fifth, instead of using the MODFLOW model to estimate water table drawdown effects, the co-lead agencies decided in 2001 that an analog method would be used. That analog approach was to use water table drawdown observations that had occurred at existing taconite pits on the Iron Range. However, the co-lead agencies did not use all of the available data and instead chose to "cherry pick" data that supported a similar range of drawdown that the "modified" contour lines indicated. Although tribal staff on multiple occasions provided the co-lead agencies with supplemental analog drawdown information, collected by MN DNR staff from additional taconite projects on the Iron Range that indicated drawdown was likely to impact an area similar to the *unmodified* MODFLOW model, the data was never considered. This is another major defect in the modeling.

Finally, the third-party contractor was allowed to assist the co-lead agencies in determining and memorializing the scope of work to review the water models that the company proponent had provided. The scope of work did not require the usual steps to determine if the model inputs were similar to other published scientific information for the area, including: hydraulic conductivity, recharge, specific yield, and specific storage. And, most of the values for the parameters employed to create the groundwater model were at least one order of magnitude less than any published scientific information for the same area. Further, the scope of work did not require review to determine if the Peter Mitchell Pit water levels had been incorporated from the same period of time that stream flow measurements were taken. This is yet another failure to comply with the minimum requirements for this modeling.

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[24] *See* contour in north-west portion of Fig. 4-8.
[25] Long-Term Hydrology Study for Northshore Mining Company, Barr Engineering, 2008, pg.20.

IV. Conclusion

For the above reasons, the co-lead agencies have not "independently evaluated" information submitted by the project proponent[26] and "insured the professional integrity" of their work product as required by NEPA. We ask again for a written response to each of these issues and that you correct these defects.

Sincerely,

Margaret Watkins
Grand Portage Water Quality Specialist

[26] 40 C.F.R. § 1506.5(a).